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**UNITED STATES DEPARTMENT OF COMMERCE  
Patent and Trademark Office**

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/493,942    01/28/00    CHANG

J    36491/LTR/B6

026111  
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1100 NEW YORK AVENUE, N.W., SUITE 600  
WASHINGTON DC 20005-3934

MM91/0913

EXAMINER

DONOVAN, J.

ART UNIT

PAPER NUMBER

2832

DATE MAILED:

09/13/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

# Office Action Summary

Application No.  
**09/493,942**

Applicant(s)  
**Chang**

Examiner  
**Lincoln Donovan**

Art Unit  
**2832**



-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Jul 31, 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above, claim(s) 17-23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some\* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\*See the attached detailed Office action for a list of the certified copies not received.

- 14) ☒ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). 7-12 20) ☐ Other:

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## DETAILED ACTION

### *Election/Restriction*

1. Applicant's election without traverse of claims 1-16 in Paper No. 17 is acknowledged.
2. Claims 17-23 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected method of forming a multilayer inductor, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 17.

### *Specification*

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract must be in narrative form and generally limited to a single paragraph on a separate sheet within the range of **50 to 150 words**. It is important that the abstract not exceed 250 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

4. The disclosure is objected to because of the following informalities: Applicant must supply serial numbers and filing dates of related applications referred to in the specification. Applicant must also delete **all** references to attorney docket numbers. Note, **for example**, specification pages 1, 80 and 144. Appropriate correction is required.

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***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, applicant should clarify the specific coupling of the tracks. From the figures and specification, it is not clear whether applicant intends the coupling to be in the design of figure 28a. Claims 2-12 inherit the defect of the parent claim.

Claim 2 lacks sufficient structure for the functional language of “fabricated utilizing a CMOS process.”

Claim 9 lacks sufficient structure for the functional language of “the shield is disposed by an n+ diffusion.”

Regarding claims 10-12, applicant should clarify what is intended by the fingered pattern.

Regarding claim 11, there is no antecedent basis for “the fingered pattern.” Applicant should clarify the specific structure of the “common ground reference.”

Regarding claim 12, there is no antecedent basis for “the second fingered pattern” or “the common ground reference.”

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Regarding claims 13-16, the term "substantially" is a relative term which renders the claim indefinite. The term "substantially" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Regarding claim 15, applicant should clarify the preamble to indicate that an inductor, rather than an inductance, is being claimed.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-3, 5-14 and 16, as best understood in view of the rejections under 35 U.S.C. second paragraph, are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuettner et al. [US 5,852,866] in view of Nasserbakht [US 6,008,713] and Sato et al. [US 5,966,063].

Kuettner et al. disclose an integrated inductor comprising:

- a spiral inductor metalization pattern [figure 3] including a plurality of parallel tracks [21] in a spiral pattern having a square configuration on a common layer, each track having first and second ends.

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Kuettner et al. discloses the instant claimed invention except for: the metalization pattern being formed on a substrate and the first and second ends being connected together.

Nasserbakht discloses a monolithic inductor being formed on a substrate.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to form the metalization patterns of Kuettner et al. on a substrate, as suggested by [and strongly implied by but not explicitly stated] by Nasserbakht, for the purpose of easily integrating the inductor.

Sato et al. discloses a spiral inductor metalization pattern [figures 20A-C] having a plurality of conductor lines in parallel with each other and coupled together at their starting and end points.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to couple the end points of the conductors of Kuettner et al., as modified, as suggested by Sato et al., for the purpose of reducing the resistance of the winding.

Regarding claim 2, official notice is taken that a CMOS process is a well known method of producing an integrated inductor.

Regarding claim 6, Kuettner et al. discloses multiple layers interconnected with vias [25].

Regarding claims 8-12, Nasserbakht discloses the use of N+ diffusion layer beneath the metal layer.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the n+ diffusion layer for the purpose of generating a desired reverse bias and increasing the Q factor. The specific arrangement of the layer would have been an obvious design

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consideration based on the specific application and operating environment of the inductor [column 4, lines 2-20].

9. Claims 4 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuettner et al., as modified, as applied to claim 1 above, and further in view of Fawal et al. [US 6,049,258].

Kuettner et al., as modified, discloses the instant claimed invention except for the specific shape of the inductor metalization layers and the use of the inductor in transmission lines.

Regarding claim 4, Fawal et al. discloses the use of orthogonal shaped metalization layers.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the orthogonal shape of Fawal et al. in Kuettner et al., as modified, for the purpose of optimizing the sizing of the inductor.

Fawal et al. discloses the inductor being used for transmission lines.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the transmission design of Fawal et al. with the inductor design of Kuettner et al., as modified, for the purpose of optimizing the transmission network.

### ***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Lincoln Donovan whose telephone number is (703) 308-3111.

The fax number for this Group is (703)308-7724.



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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703)308-0956.

LDD

September 8, 2001



LINCOLN DONOVAN  
PRIMARY EXAMINER  
GROUP 2100